Case 2: Derivatives

Rationale and Trading Strategy

For our rationale, because of options trading's complexity, we integrated the Black-Scholes model. We have considered other strategies, like simple machine learning or the tree model. However, because SPX options hold unique possessions and magnify any existing volatility, we view Black-Scholes as a more flexible model. By using VIX, the model enabled us to calculate implied volatility for SPX. We took parameters from the given dataset and calculated the variables needed for the Black-Scholes equation. Our trading strategy revolves around trading SPX options based on differences between Black-Scholes's predicted volatility and the bid and ask price. If our calculated value is not null and is less than the bid price, we will buy options at the bid size when we have enough capital. When the calculated value is less than the ask price, we will sell options at the ask size.